

REMARKS

Claims 1-13 and 15-17 are pending in the present application. Claims 8-13 and 15-17 are rejected. Claims 8, 15 and 16 are herein amended.

Applicants' Response to Claim Rejections under 35 U.S.C. §103

Claims 9-13 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki '942 in view of Fischer et al. (U.S. Patent No. 5,975,260) and in further view of Stefanutti.

It is the position of the Office Action that **Suzuki '942** discloses the invention as claimed, with the exception of teaching a gap/groove having the claimed configuration, the segments being adhered to the core, and the core being made of metal. The Office Action relies on **Stefanutti** to proving the teaching of a metal core, and segments applied to the metal core. The Office Action relies on **Fischer** to provide the teaching of a gap, a width at an outer peripheral opening being larger than a width at an inner peripheral opening, parallel linear opposite sides and a V-shape. The Office Action illustrates the wide opening as the outer peripheral opening, the narrow opening as the inner peripheral opening and the parallel sides as the parallel linear opposite sides.

Fischer discloses a friction lining 300 having channels or grooves 304, pockets 305 and 306. These channels or grooves 304 and pockets 305 and 306 are depressions or cutouts formed in the friction lining 300, not segments formed on a metal core. Therefore, they are lower as

compared to friction surface 303. Additionally, it is noted that the channels or grooves 304 are shaped in a curved manner, and not a segment shape.

Even if the channels or grooves 304 and pockets 305 and 306 of **Fischer** could be considered to be segments, they are not formed in the claimed shape. As clearly shown in the description corresponding to Figure 5 of **Fischer**, the asserted “wide opening” is in fact a part of a friction surface 303 defined between two curved parts of channels or grooves 304 that go apart from each other toward the outside of friction lining 300. Similarly, the asserted “narrow opening” is in fact a part of the friction surface 303 defined between two curved parts of the channels or grooves 304 that go apart from each other toward the inside of friction lining 300. A width of the real groove 304 is constant at any location as clearly shown in Figure 5. The groove 304 consists of an outer peripheral zig-zag or waved part, an inner peripheral zig-zag or wave part and a straight part connecting them.

In contrast, claims 9-13 and 17 require an oil groove defined by a gap between adjacent segment pieces has a wider outer peripheral opening (outer part), a narrower inner peripheral opening (inner part) and a center part defined between adjacent straight side lines of the adjacent segment pieces. The outer part, the inner part, and the center part constitute integrally the gap as the oil groove as one continuously or linearly extending gap. No obstacle or colliding element is disposed between the outer part, the inner part, and the center part.

Thus, **Fischer** obviously fails to disclose a wider outer peripheral opening and a narrower inner peripheral opening of a gap as an oil groove being formed between adjacent segment pieces. Accordingly, **Fischer** discloses no parallel linear opposite sides between a wider outer

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peripheral opening and a narrower inner opening of a gap as an oil groove being formed between adjacent segment pieces.

It is not clear if the arrow added by the Examiner in the illustration of the Office Action indicate the curved parts of the groove 304 or pockets 305. Even if they indicate the pockets 305, it merely means that such pockets 305 are provided at opposite ends of a straight part of the friction surface 303, not at opposite ends of an oil groove. Accordingly, pockets 305 are not equivalent to a wider outer peripheral opening and a narrower inner peripheral opening of a gap as an oil groove being formed between adjacent segment pieces in any way.

Suzuki '942 and **Stefanutti** disclose segment shaped friction elements which are disposed on a metal core. On the other hand, **Fischer** discloses curved-shaped depressions or cut-outs formed in a friction lining. The two technologies are not capable of being combined. Therefore, Applicants respectfully submit that the combination of references is improper. Favorable reconsideration is respectfully requested.

Claims 8 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki '942 (U.S. Patent No. 6,675,942) in view of Stefanutti et al (U.S. Patent No. 5,776,288).

It is the position of the Office Action that **Suzuki '942** discloses the invention as claimed, with the exception of teaching sides that are formed by press forming, the segments attached to the core, or a core made of metal. Regarding the method of manufacturing, the Office Action

does not give this language patentable weight. The Office Action also states that “it is believed that Suzuki’s lines formed at 39 and 40 anticipate the claimed invention.”

Suzuki ‘942 discloses in Figure 4 a cross-section of friction material segment 33. This cross-section corresponds to the area A of Figure 2. Figure 4 discloses curved faces 40 and 39 on the end portion 35. As illustrated in Figure 2, friction material segment 33 is segment shaped. Thus, end portions 35 are not parallel to each other.

First, it is noted that the arguments regarding “parallel lines” are only germane to claim 15, since claim 8 recites “straight lines” instead of “parallel lines.” With regard to claim 15, Applicants respectfully submit that **Suzuki ‘942** does not disclose the invention as claimed. Claim 15 recites “two opposite parts of said friction material substrate are pressed at two sides of two parallel lines defining a separation between a pressed and an unpressed area.” This is clearly illustrated in Figures 3 and 4. However, in order to improve the clarity of claim 15, Applicants herein amend the claim to recite “two opposite end parts of said friction material substrate are pressed at two sides of two parallel lines defining a separation between a pressed and an unpressed area.” Applicants also amend claim 8 in a similar manner.

As is evident from Figure 2, the two end parts of **Suzuki ‘942** are not pressed at two sides of parallel lines. The lines along which curved faces 39 and 40 are formed appear to follow the shape of friction material segment 33. Thus, these lines would intersect if extended. Accordingly, **Suzuki ‘942** does not disclose the “parallel lines” of claim 15.

With regard to claim 8, the issue of parallel lines is not relevant as discussed above. Therefore, in response to the rejection of claim 8, Applicants respectfully maintain the previous

argument that the pressing and heat-compressing of a part of the segment portion creates structural distinctions over the cited art. Specifically, the so-called method limitations in the claims do in fact set forth structural distinctions between the present invention and the prior art. That is, the pressed or heat-compressed areas of the segment will be of a higher density than the un-pressed or unheat-compressed areas.

In order to more clearly recite this difference, Applicants herein amend claims 8, 15 and 16. The amendments of claims 8, 15 and 16 add further limitations of a specific structure on the pressed and heat-compressed areas or the pressed areas of the segment piece. First, the present invention is characterized in that the pressed and heat-compressed area of claims 15 and 17 or the pressed areas of claim 16 extend along side edges of the non-pressed area defined between the opposite pressed and heat-compressed areas, while having a band-shape with an even thickness as a whole that is larger than the thickness of the non-pressed part. Second, a density of a material of the pressed and heat-compressed area of claims 15 and 17 or the pressed areas of claim 16 is higher than that of the non-pressed part.

Applicants respectfully submit that this differs structurally from an area of **Suzuki '942**, which is not pressed or heat-compressed. Favorable reconsideration is respectfully requested.

Claim 16 was rejected under 35 U.S.C. §103(a) as being unpatentable over Suzuki '942 in view of Suzuki '629 (U.S. Patent No. 6,170,629).

It is the position of the Office Action that **Suzuki '942** discloses the invention as claimed, with the exception of teaching press-forming the edges, segments that are adhered to the core, or

a core made of metal. The Office Action relies on **Suzuki '629** to provide this teaching. It is also noted that the Office Action argues that **Suzuki '942** discloses “chamfered portions.” This language is not present in claim 16.

It is the position of the Office Action that **Suzuki '629** discloses a friction material with segments that are adhered to the core and stamped/pressed in their entirety, including the four edges. The Office Action notes that the press forming distorts the edges. The Office Action also states that **Suzuki '629** shows four edges. It is the position of the Office Action that pressing the friction material would also press the sides up to at least the edges of the rounded corners. The Office Action points to Figure 2 of **Suzuki '629** to teach pressing the edges through the chamfered region.

Claim 16 requires that “all four peripheral edges of said friction material substrate cut into the segment shape are pressed.” This construction is illustrated in Figure 10. The Office Action appears to argue that the peripheral edges of the friction material segment 2 are inherently pressed. **Suzuki '629** appears to disclose that the segments 2 are “stamped,” however the reference does not disclose that the segments are pressed. It is noted that Figure 1 of **Suzuki '629** discloses bored portions 2a. However, these bored portions 2a are only disclosed to be on the two edges of the segment 2 which oppose each other, and not on the inner and outer edges of the segment 2. Therefore, **Suzuki '629** does not disclose that “all four peripheral edges” of the friction material substrate cut into the segment shape are pressed. Applicants also note that the amendments discussed above also are sufficient to distinguish over **Suzuki '629**. Favorable reconsideration is respectfully requested.


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For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned agent.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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